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|--|---|--|---|----------------------|------------------------------------|
| FORM PTO-1449<br>MODIFIED                                |   | U.S. DEPARTMENT OF COMMERCE<br>PATENT AND TRADEMARK OFFICE |   | Application Number   | 10/801,907                         |
| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b> |   |  |   | Filing Date          | March 15, 2004                     |
|  |   |  |   | First Named Inventor | PANIGRAHY, RINA                    |
|  |   |  |   | Group Art Unit       | <del>2161</del> 2163               |
|  |   |  |   | Examiner Name        | <del>METIAHIC, SAJET</del> Hung Vy |
| Sheet  | 1 | of   | 3 | Attorney Docket No.  | 47380                              |

| PENDING U.S. PATENT APPLICATIONS |          |                    |                             |                   |
|----------------------------------|----------|--------------------|-----------------------------|-------------------|
| EXAMINER'S INITIALS              | Cite No. | Application Number | Filing Date<br>(MM-DD-YYYY) | Name of Applicant |
| HV                               | AA       | 10/165,590         | 06-08-2002                  | Panigrahy et al.  |

| EXAMINER'S INITIALS | Cite No. | OTHER DOCUMENTS   |
|---------------------|----------|---|
| HV                  | AB       | LAMPSON ET AL., "IP Lookups Using Multiway and Multicolumn Search," IEEE Transactions on Networking, Vol. 7, No. 3, June 1999, pp. 324-334.   |
| HV                  | AC       | SRINIVASAN ET AL., "Fast Address Lookups Using Controlled Prefix Expansion," ACM Transaction on Computer Systems, Vol. 17, Issue 1, pp. 1-40, February 1999.  |
| HV                  | AD       | DOERINGER ET AL., Routing on longest-matching prefixes," IEEE/ACM Transactions on Networking, Vol. 4, No. 1, pp. 86-97, Feb. 1996.  |
| HV                  | AE       | UGA ET AL., "A Fast And Compact Longest Match Prefix Look-Up Method Using Pointer Cache For Very Long Network Address," Computer Communications and Networks, Eighth International Conference, pp. 595-602, 1999. |

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|--------------------|-----------|-----------------|------------|
| Examiner Signature | /Hung Vy/ | Date Considered | 02/15/2007 |
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|  |   |  |   | Group Art Unit       | <del>2461</del> 2163              |
|  |   |  |   | Examiner Name        | <del>METJAHIC, SAET</del> hung vy |
| Sheet  | 2 | of   | 3 | Attorney Docket No.  | 47380                             |

| EXAMINER'S INITIALS | Cite No. | OTHER DOCUMENTS  |
|---------------------|----------|--|
| HV                  | BA       | DONALD R. MORRISON, "PATRICIA - Practical Algorithm to Retrieve Information Coded in Alphanumeric," Journal of the ACM, Vol. 15, No. 4, October 1968, pp. 514-534.   |
| HV                  | BB       | WALDVOGEL ET AL., "Scalable High Speed IP Routing Lookups," Proc. SIGCOMM '97, ACM, 1997, pp. 25-36. (no month)  |
| HV                  | BC       | LAMPSON ET AL., "IP Lookups Using Multiway and Multicolumn Search," Proc. Infocom 98, March 1998, 24 pages.  |
| HV                  | BD       | V. SRINIVASAN and GEORGE VARGHESE, "Faster IP Lookups using Controlled Prefix Expansion," ACM SIGMETRICS Performance Evaluation Review, Vol. 26 No.1, June 1998, p.1-10.   |
| HV                  | BE       | STEFAN NILSSON and GUNNAR KARLSSON, "Fast Address Look-up for Internet Routers," Proceedings of IEEE Broadband Communications, April 1998, 12 pages.   |
| HV                  | BF       | WILLIAM N. EATHERTON, HARDWARE-BASED INTERNET PROTOCOL PREFIX LOOKUPS, Master's thesis, Sever Institute, Washington University, St. Louis, MO, May 1999, 109 pages.  |
| HV                  | BG       | LOCKWOOD ET AL., "Field Programmable Port Extender (FPX) for Distributed Routing and Queuing," Proceedings of the ACM/SIGDA international symposium on Field programmable gate arrays, February 2000, pp. 137-144. |
| HV                  | BH       | RUIZ-SANCHEZ ET AL., "Survey and Taxonomy of IP Address Lookup Algorithms," IEEE Network Magazine, Vol. 15, No. 2, March/April 2001, pp. 8-23.   |
| HV                  | BI       | PANKAJ GUPTA and NICK MCKEWON, "Algorithms for Packet Classification," IEEE Network Magazine, Vol. 15, No. 2, March/April 2001, pp. 24-32.   |
| HV                  | BJ       | IYER ET AL., "ClassiPI: An Architecture for Fast and Flexible Packet Classification," IEEE Network Magazine, Vol. 15, No. 2, March/April 2001, pp. 33-41.  |
| HV                  | BK       | WALDVOGEL ET AL., "Scalable High Speed Prefix Matching," ACM Transactions on Computer Systems, Vol. 19, No. 4, November 2001, pp. 440-482.   |

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|  |   |  |   | Examiner Name        | <del>METJAHIC, SAFET</del> Hung Vy |
| Sheet  | 3 | of   | 3 | Attorney Docket No.  | 47380                              |

| EXAMINER'S INITIALS | Cite No. | OTHER DOCUMENTS  |
|---------------------|----------|--|
| HV                  | CA       | DEVAVRAT SHAH AND PANKAJ GUPTA, "Fast Incremental Updates on Ternary-CAMs for Routing Lookups and Packet Classification," Proc. Hot Interconnects VIII, August 2000, Stanford. IEEE Micro, vol. 21, no. 1, January/February 2001, 9 pages. |
| HV                  | CB       | Waldvogel et al., "Scalable Best Matching Prefix Lookups," PODC 98, ACM 1998. (no month)   |
| HV                  | CC       | RADIA PERLMAN, INTERCONNECTIONS: BRIDGES, ROUTERS, SWITCHES, AND INTERNETWORKING PROTOCOLS, Second Edition, Addison-Wesley, 2000, pp. 347-365. (no month)  |
| HV                  | CD       | PANKAJ GUPTA AND NICK MCKEOWN, "Algorithms for Packet Classification," IEEE Network Special Issue, March/April 2001, vol. 15, no. 2, pp 24-32 (reprint 29 pages).  |
| HV                  | CE       | Srinivasan et al., "Packet Classification Using Tuple Space Search," ACM Computer Communication Review, 1999. ACM SIGCOMM'99, Sept. 1999 (12 pages).   |
| HV                  | CF       | Srinivasan et al., "Fast and Scalable Layer Four Switching," ACM Computer Communication Review, 28(4):191-202, 1998. ACM SIGCOMM'98, Sept. 1998 (12 pages).  |
| HV                  | CG       | STEFAN NILSSON AND GUNNAR KARLSSON, "IP-Address Lookup Using LC-Tries," IEEE Journal on Selected Areas in Communications, June 1999 (12 pages).  |

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IDS - 01/21/2019 **ELECTRONIC INFORMATION DISCLOSURE STATEMENT**

Electronic Version v18

Stylesheet Version v18.0

| Title of Invention | Identification of a longest matching prefix based on a search of intervals corresponding to the prefixes |
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Application Number : 10/801907



Confirmation Number: 3071

First Named Applicant: Rina Panigrahy

Attorney Docket Number: 47380

Art Unit: 2161

Examiner: Safet Metjahic

Search string: ( 5781722 or 5848416 or 6115716 or 5528701 or 5651099 or 5721899 or 5781431 or 5829004 or 5995971 or 6041053 or 6298339 or 6334153 or 6356951 or 5088032 or 5809501 or 5884297 or 6018524 or 6067574 or 6141738 or 6237061 or 6289414 or 6243667 or 6236658 or 5740171 or 6295576 or 5920886 or 6560610 or 6389506 or 6374326 or 6775737 or 6717946 or 6862281 or 6377577 or 6658002 or 5857196 or 5781772 or 6725326 or 6564211 or 6341346 or 5920857 or 6741985 ).pn

## US Patent Documents

Note: Applicant is not required to submit a paper copy of cited US Patent Documents

| init | Cite.No. | Patent No. | Date       | Patentee              | Kind | Class | Subclass |
|------|----------|------------|------------|-----------------------|------|-------|----------|
| HV   | 1        | 5781722    | 1998-07-14 | Wilkinson, III et al. |      | 395   | 600      |
| HV   | 2        | 5848416    | 1998-12-08 | Tikkanen              |      | 707   | 101      |
| HV   | 3        | 6115716    | 2000-09-05 | Tikkanen et al.       |      | 707   | 100      |
| HV   | 4        | 5528701    | 1996-06-18 | Aref                  |      | 382   | 178      |
|      | 5        | 5651099    | 1997-07-22 | Konsella              |      | 395   | 13       |
|      | 6        | 5721899    | 1998-02-24 | Nambia                |      | 395   | 603      |
|      | 7        | 5781431    | 1998-07-14 | Duret et al.          |      | 700   | 28       |
|      | 8        | 5829004    | 1998-10-27 | Au                    |      | 707   | 100      |
|      | 9        | 5995971    | 1999-11-30 | Douceur et al.        |      | 707   | 100      |
|      | 10       | 6041053    | 2000-03-21 | Douceur et al.        |      | 370   | 389      |
|      | 11       | 6298339    | 2001-10-02 | Bjornson              | B1   | 707   | 3        |
|      | 12       | 6334153    | 2001-12-25 | Boucher et al.        |      | 709   | 230      |
|      | 13       | 6356951    | 2002-03-12 | Gentry, Jr.           |      | 709   | 217      |
|      | 14       | 5088032    | 1992-02-11 | Bosack                |      | 395   | 200      |
|      | 15       | 5809501    | 1998-09-15 | Noven                 |      | 707   | 7        |
|      | 16       | 5884297    | 1999-03-16 | Noven                 |      | 707   | 1        |
|      | 17       | 6018524    | 2000-01-25 | Turner et al.         |      | 370   | 392      |
| HV   | 18       | 6067574    | 2000-05-23 | Tzeng                 |      | 709   | 247      |

|    |    |         |            |                       |    |     |     |
|----|----|---------|------------|-----------------------|----|-----|-----|
| HV | 19 | 6141738 | 2000-10-31 | Munter et al.         |    | 711 | 206 |
|    | 20 | 6237061 | 2001-05-22 | Srinivasan et al.     | B1 | 711 | 108 |
|    | 21 | 6289414 | 2001-09-11 | Feldmeier et al.      | B1 | 711 | 108 |
|    | 22 | 6243667 | 2001-06-05 | Kerr et al.           | B1 | 703 | 27  |
|    | 23 | 6236658 | 2001-05-22 | Essbaum et al.        | B1 | 370 | 401 |
|    | 24 | 5740171 | 1998-04-14 | Mazzola et al.        |    | 370 | 392 |
|    | 25 | 6295576 | 2001-09-25 | Ogura et al.          | B1 | 711 | 108 |
|    | 26 | 5920886 | 1999-07-06 | Feldmeier             |    | 711 | 108 |
|    | 27 | 6560610 | 2003-05-06 | Eatherton et al.      |    |     |     |
|    | 28 | 6389506 | 2002-05-14 | Ross et al.           |    |     |     |
|    | 29 | 6374326 | 2002-04-16 | Kansal et al.         |    |     |     |
|    | 30 | 6775737 | 2004-08-10 | Warkhede et al.       |    |     |     |
|    | 31 | 6717946 | 2004-04-06 | Hariguchi et al.      |    |     |     |
|    | 32 | 6862281 | 2005-03-01 | Chandrasekaran        |    |     |     |
|    | 33 | 6377577 | 2002-04-23 | Bechtolsheim et al.   |    |     |     |
|    | 34 | 6658002 | 2003-12-02 | Ross et al.           |    |     |     |
|    | 35 | 5857196 | 1999-01-05 | Angle et al.          |    |     |     |
|    | 36 | 5781772 | 1998-07-14 | Wilkinson, III et al. |    |     |     |
|    | 37 | 6725326 | 2004-04-20 | Patra et al.          |    |     |     |
|    | 38 | 6564211 | 2003-05-13 | Andreev et al.        |    |     |     |
|    | 39 | 6341346 | 2002-01-22 | Benayoun et al.       |    |     |     |
|    | 40 | 5920857 | 1999-07-06 | Rishe et al.          |    |     |     |
| HV | 41 | 6741985 | 2004-05-25 | Green                 |    |     |     |

**Signature**

|               |            |
|---------------|------------|
| Examiner Name | Date       |
| /Hung Vy/     | 02/15/2007 |